ABSTRACT OF THE DISCLOSURE

To improve the radiation property without inhibiting miniaturization of the device, heat generated at a heat generating layer (5) is radiated to a substrate (1) via plugs (7, 17), wiring layers (8, 18), and plugs (9, 19). A cross sectional along the principal plane of the substrate (1) of the plugs (7, 9, 17, 19) is set to be a rectangle, and the long sides of the rectangle are parallel to the direction perpendicular to the direction connecting one end and the other end of the heat generating layer (5). Between the plugs (9, 19) and the semiconductor layer (2) is interposed n-type semiconductor layers (3, 13).